

REMARKS

Claims 1-39 are pending in the Application. Claims 1, 2, 12, 30 and 31 are rejected under 35 U.S.C. §102(e). Claims 32 and 33 are rejected under 35 U.S.C. §103(a). Claims 15-29 and 35-39 are allowed. Claims 3-11, 13, 14 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants respectfully traverse these rejections for at least the reasons stated below and respectfully request that the Examiner reconsider and withdraw these rejections.

I. REJECTIONS UNDER 35 U.S.C. §102(e):

The Examiner has rejected claims 1, 2, 12, 30 and 31 under 35 U.S.C. §102(e) as being anticipated by Uzun (U.S. Patent No. 6,606,681). Applicants respectfully traverse these rejections for at least the reasons stated below and respectfully request that the Examiner reconsider and withdraw these rejections.

For a claim to be anticipated under 35 U.S.C. §102, each and every claim limitation must be found within the cited prior art reference and arranged as required by the claim. M.P.E.P. §2131.

Applicants respectfully assert that Uzun does not disclose "selecting a table to be accessed using said search key" as recited in claim 1. The Examiner cites Figure 1A and column 1, lines 50-53 of Uzun as disclosing the above-cited claim limitation. Office Action (2/16/2006), page 3. Applicants respectfully traverse and assert that Uzun instead discloses that the CAM includes a plurality of entries, each including a valid bit and a key. Column 1, lines 50-52. Uzun further discloses that the valid bit is set for each valid entry in the CAM. Column 1, lines 52-53. There is no language in the cited passage as disclosing selecting a table, as defined in the Specification. The Specification may be used as a dictionary to learn the meaning of a term in the patent claim. *Toro Co. v. White Consol. Indus., Inc.*, 199 F.3d 1295, 1299, 53 U.S.P.Q.2d 1065, 1067 (Fed. Cir. 1999). Neither is there any language in the cited passage that discloses selecting a table to be accessed using a search key. Neither is there any language in the cited passage that discloses selecting a table to be accessed

using a search key that was generated by extracting one or more fields from a packet header of a packet of data. Thus, Uzun does not disclose all of the limitations of claim 1, and thus claim 1 is not anticipated by Uzun. M.P.E.P. §2131.

Applicants further assert that Uzun does not disclose "determining whether to identify said data structure associated with said packet of data using a content addressable memory or a tree based on a table definition of said selected table" as recited in claim 1. The Examiner cites column 5, lines 35-37 of Uzun as disclosing the above-cited claim limitation. Office Action (2/16/2006), page 3. Applicants respectfully traverse and assert that Uzun instead discloses that the packet processing engine forwards the extracted address information in the form of a search string to the CAM control logic via a selector. Column 5, lines 35-37. There is no language in the cited passage that discloses determining whether to identify a data structure associated with a packet of data using a content addressable memory or a tree. Instead, Uzun only discloses the use of a CAM. Further, there is no language in the cited passage that discloses determining whether to identify a data structure associated with a packet of data using a content addressable memory or a tree based on a table definition. Neither is there any language in the cited passage that discloses determining whether to identify a data structure associated with a packet of data using a content addressable memory or a tree based on a table definition of a selected table. Thus, Uzun does not disclose all of the limitations of claim 1, and thus claim 1 is not anticipated by Uzun. M.P.E.P. §2131.

Applicants further assert that Uzun does not disclose "identifying said data structure associated with said packet of data in response to said determination step" as recited in claim 1. The Examiner cites column 6, lines 49-65 of Uzun as disclosing the above-cited claim limitation. Office Action (2/16/2006), page 3. Applicants respectfully traverse and assert that Uzun instead discloses that each address location in the CAM has a direct relationship with the data stored in the status memory. Column 6, lines 50-52. Uzun further discloses that the hit address determined in a search of the CAM for a given key is provided to the status memory so that the associated status information (bits) can be fed into the next block of the device.

Column 6, lines 55-59. There is no language in the cited passage that discloses identifying a data structure associated with the packet of data in response to determining whether to identify a data structure using a content addressable memory or a tree based on a table definition. Thus, Uzun does not disclose all of the limitations of claim 1, and thus claim 1 is not anticipated by Uzun. M.P.E.P. §2131.

Applicants further assert that Uzun does not disclose "transferring said search key to a content addressable memory by a tree search engine configured to identify said data structure associated with said packet of data" as recited in claim 30. The Examiner cites Figure 1A and column 1, lines 49-63 of Uzun as disclosing the above-cited claim limitation. Office Action (2/16/2006), page 5. Applicants respectfully traverse and assert that Uzun instead discloses that each address location in the CAM has a direct relationship with the data stored in the status memory. Column 6, lines 50-52. Uzun further discloses that the hit address determined in a search of the CAM for a given key is provided to the status memory so that the associated status information (bits) can be fed into the next block of the device. Column 6, lines 55-59. There is no language in the cited passage that discloses transferring a search key to a CAM by a tree search engine. Neither is there any language in the cited passage that discloses transferring a search key to a CAM by a tree search engine configured to identify a data structure associated with a packet of data. Thus, Uzun does not disclose all of the limitations of claim 30, and thus claim 30 is not anticipated by Uzun. M.P.E.P. §2131.

Claims 2 and 12 each recite combinations of features of claim 1, and thus are not anticipated by Uzun for at least the above-stated reasons claim 1 is not anticipated by Uzun. Claim 31 recites combinations of features of claim 30, and thus is not anticipated by Uzun for at least the above-stated reasons claim 30 is not anticipated by Uzun. Claims 2, 12 and 31 recite additional features, which, in combination with the features of the claims upon which they depend, are not anticipated by Uzun.

For example, Uzun does not disclose "wherein if said table definition of said selected table determined to use said content addressable memory to identify said data structure then the method further comprises the steps of: transferring said search key

to a tree search engine; and associating said search key with a particular thread number/table number pair" as recited in claim 2. The Examiner cites Figure 1A and column 1, lines 49-63 of Uzun as disclosing the above-cited claim limitation. Office Action (2/16/2006), page 4. Applicants respectfully traverse.

Uzun instead discloses that the CAM includes a plurality of entries, each including a valid bit and a key. Column 1, lines 50-52. Uzun further discloses that the valid bit is set for each valid entry in the CAM. Column 1, lines 52-53. Uzun further discloses that an external search engine provides keys to be searched for in the information space associated with the CAM. Column 1, lines 57-59. Uzun further teaches that thereafter, the valid portion of the CAM is searched. Column 1, lines 59-60. Uzun further discloses that the address of a matching key is obtained upon detection of a match. Column 1, lines 60-62. Hence, Uzun discloses using an external search engine to provide keys to be searched for in the information space associated with the CAM.

There is no language in the cited passage that discloses transferring a search key to a tree search engine. Neither is there any language in the cited passage that discloses transferring a search key to a tree search engine where the search key is generated by extracting one or more fields from a packet header of a packet of data. Neither is there any language in the cited passage that discloses transferring a search key to a tree search engine if the table definition of the selected table determined to use the content addressable memory to identify the data structure. Neither is there any language in the cited passage that discloses associating a search key with a particular thread number/table number pair. Neither is there any language in the cited passage that discloses associating a search key with a particular thread number/table number pair where the search key is generated by extracting one or more fields from a packet header of a packet of data. Neither is there any language in the cited passage that discloses associating a search key with a particular thread number/table number pair if the table definition of the selected table determined to use the content addressable memory to identify the data structure. Thus, Uzun does not disclose all of the limitations of claim 2, and thus claim 2 is not anticipated by Uzun. M.P.E.P. §2131.

As a result of the foregoing, Applicants respectfully assert that not each and every claim limitation was found within Uzun, and thus claims 1, 2, 12, 30 and 31 are not anticipated by Uzun. M.P.E.P. §2131.

II. REJECTIONS UNDER 35 U.S.C. §103(a):

The Examiner has rejected claims 32 and 33 under 35 U.S.C. §103(a) as being unpatentable over Uzun in view of Hunter et al. (U.S. Patent No. 6,343,289) (hereinafter "Hunter"). Applicants respectfully traverse these rejections for at least the reasons stated below and respectfully request the Examiner to reconsider and withdraw these rejections.

A. Uzun and Hunter, taken singly or in combination, do not teach or suggest the following claim limitations.

Applicants respectfully assert that Uzun and Hunter, taken singly or in combination, do not teach or suggest "wherein if said search key does not match a particular entry in said content addressable memory then said content addressable memory returns a null pointer" as recited in claim 32. The Examiner cites column 1, lines 47-49 and column 9, lines 7-12 of Hunter as teaching the above-cited claim limitation. Office Action (2/16/2006), page 7. Applicants respectfully traverse and assert that Hunter instead teaches that the forwarding database entries include a pointer to the next entry in the bin or a null pointer if the entry happens to be the last one in the bin. Column 1, lines 46-49. Hunter further teaches that if the last entry in the hash bin has been reached, then no matching entry exists and the search is complete. Column 9, lines 8-10. Hence, Hunter teaches a forwarding database entry having a null pointer if the entry happens to be the last one in the bin and further teaches that once the last entry in the hash bin has been reached, the search is complete. While Hunter teaches a null pointer, Hunter does not teach a content addressable memory returning a null pointer if a search key does not match a particular entry in the content addressable memory. Therefore, the Examiner has not presented a *prima facie* case of obviousness in rejecting claim 32, since the Examiner is relying upon an incorrect, factual predicate in support of the rejection. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1455 (Fed. Cir. 1998).

Applicants further assert that Uzun and Hunter, taken singly or in combination, do not teach or suggest "performing a search in said content addressable memory using said search key; and determining whether said search in said content addressable memory is complete" as recited in claim 33. As understood by Applicants, the Examiner cites column 1, lines 47-49 and column 9, lines 7-12 of Hunter as teaching the above-cited claim limitation. Office Action (2/16/2006), page 7. Applicants respectfully traverse. As stated above, Hunter instead teaches that the forwarding database entries include a pointer to the next entry in the bin or a null pointer if the entry happens to be the last one in the bin. Column 1, lines 46-49. Hunter further teaches that if the last entry in the hash bin has been reached, then no matching entry exists and the search is complete. Column 9, lines 8-10. Hence, Hunter teaches a forwarding database entry having a null pointer if the entry happens to be the last one in the bin and further teaches that once the last entry in the hash bin has been reached, the search is complete. There is no language in the cited passages that teaches performing a search in a content addressable memory. Neither is there any language in the cited passages that teaches performing a search in a content addressable memory using a search key. Neither is there any language in the cited passages that teaches determining whether a search in a content addressable memory is complete. Therefore, the Examiner has not presented a *prima facie* case of obviousness in rejecting claim 33, since the Examiner is relying upon an incorrect, factual predicate in support of the rejection. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1455 (Fed. Cir. 1998).

B. Examiner's motivation is insufficient to establish a *prima facie* case of obviousness in rejecting claim 32 in light of Uzun in view of Hunter.

Most if not all inventions arise from a combination of old elements. *See In re Rouffet*, 47 U.S.P.Q.2d 1453, 1457 (Fed. Cir. 1998). Obviousness is determined from the vantage point of a hypothetical person having ordinary skill in the art to which the patent pertains. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1457 (Fed. Cir. 1998). Therefore, an Examiner may often find every element of a claimed invention may often be found in the prior art. *Id.* However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed

invention. *See Id.* In order to establish a *prima facie* case of obviousness, the Examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). That is, the Examiner must provide some suggestion or motivation, either in the references themselves, the knowledge of one of ordinary skill in the art, or, in some case, the nature of the problem to be solved, to modify the reference or to combine reference teachings. *See In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). Whether the Examiner relies on an express or an implicit showing, the Examiner must provide particular findings related thereto. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

The Examiner admits that Uzun does not teach "wherein if said search key does not match a particular entry in said content addressable memory then said content addressable memory returns a null pointer" as recited in claim 32. Office Action (2/16/2006), page 6. The Examiner modifies Uzun with Hunter to include the above-cited claim limitation "to provide a detection and efficient means of when the key search is complete and whether a match is found in the CAM" citing column 6, lines 34-40 and column 10, lines 39-43 of Uzun as support for the Examiner's motivation. Office Action (2/16/2006), pages 6-7. The Examiner's motivation is insufficient to establish a *prima facie* case of obviousness in rejecting claim 32.

The Examiner's motivation ("to provide a detection and efficient means of when the key search is complete and whether a match is found in the CAM") does not provide reasons, as discussed further below, that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would modify Uzun to include the claim limitations of claim 32. Accordingly, the Examiner has not presented a *prima facie* case of obviousness for rejecting claim 32. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998).

As stated above, the Examiner's motivation for modifying Uzun to include the above-cited claim limitation is "to provide a detection and efficient means of when the key search is complete and whether a match is found in the CAM" citing column 6, lines 34-40 and column 10, lines 39-43 of Uzun as support for the Examiner's motivation. Column 6, lines 34-40 of Uzun teaches that the CAM includes a search routine that is invoked upon receipt of a search string where the search routine compares the search string to the CAM's key entries, masking bits in accordance with any received masking information and returns an address for a matching entry as an output. Column 10, lines 39-43 of Uzun teaches that if there is no match found in the CAM, this new destination (source) address entry is inserted to an empty location by writing the destination address into the key field, setting the valid bit to valid, and setting tag bits to an appropriate value. Hence, the cited passages teach adding entries to the CAM as well as comparing a search string with the CAM's key entries and returning an address for a matching output. The Examiner has failed to explain how the cited passages relate to the missing claim limitations. Neither has the Examiner explained how the cited passages relate to the statement "to provide a detection and efficient means of when the key search is complete and whether a match is found in the CAM." The cited passages in Uzun and the Examiner's stated motivation do not provide reasons as to why one skilled in the art would modify Uzun to include the missing claim limitation of claim 32 as discussed further below. Accordingly, the Examiner has not presented a *prima facie* case of obviousness for rejecting claim 32. *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998).

Uzun addresses the problem of minimizing the CAM size while still realizing the benefits derived from an associative memory structure. Column 2, lines 15-17. The Examiner has not provided any reasons as to why one skilled in the art would modify Uzun, which teaches a CAM with an associative memory portion and a random access memory portion (column 2, lines 20-28), to have a CAM return a null pointer if a search key does not match a particular entry in the CAM (Examiner admits that Uzun does not teach this limitation). The Examiner's motivation ("to provide a detection and efficient means of when the key search is complete and whether a match is found in the CAM") does not provide such reasoning. The

Examiner has not provided a rationale connection between "providing a detection and efficient means of when the key search is complete and whether a match is found in the CAM" and the limitation of "wherein if said search key does not match a particular entry in said content addressable memory then said content addressable memory returns a null pointer" as recited in claim 32. The Examiner has not explained how providing a detection and efficient means of when the key search is complete and whether a match is found in the CAM necessarily would cause one skilled in the art to modify Uzun to have a content addressable memory return a null pointer if the search key does not match a particular entry in the content addressable memory. The Examiner must provide objective evidence in modifying Uzun to include the missing limitations of claim 32. *In re Lee*, 61 U.S.P.Q.2d 1430, 1434 (Fed. Cir. 2002). Instead, the Examiner is merely relying upon his own subjective opinion which is insufficient to support a *prima facie* case of obviousness in rejecting claim 32. *Id.* Consequently, the Examiner's motivation is insufficient to support a *prima facie* case of obviousness for rejecting claim 32. *Id.*

C. Examiner has not provided any motivation for modifying Uzun with Hunter to include the limitation of claim 33.

As stated above, the Examiner must provide some suggestion or motivation, either in the references themselves, the knowledge of one of ordinary skill in the art, or, in some case, the nature of the problem to be solved, to modify the reference or to combine reference teachings. *See In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). The Examiner admits that Uzun does not teach the limitations of claim 33. Office Action (2/16/2006), pages 6-7. The Examiner concludes that the combination of Uzun and Hunter teaches the limitations of claim 33. Office Action (2/16/2006), pages 6-7. The Examiner though has not provided any motivation for modifying Uzun with Hunter to perform a search in the content addressable memory using the search key, as recited in claim 33. Neither has the Examiner provided any motivation for modifying Uzun with Hunter to determine whether the search in the content addressable memory is complete, as recited in claim 33. Since the Examiner has not provided such motivation, the Examiner has not provided a *prima facie* case of obviousness in rejecting claim 33. *See In re*

Dembiczak, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999); M.P.E.P. §2143.

III. ALLOWABLE SUBJECT MATTER:

The Examiner has allowed claims 15-29 and 35-39. Office Action (2/16/2006), page 7. The Examiner has objected to claims 3-11, 13, 14 and 34 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Office Action (2/16/2006), page 8. Applicants appreciate the allowance of claims 15-29 and 35-39 and the indication of allowability of claims 3-11, 13, 14 and 34.

IV. CONCLUSION

As a result of the foregoing, it is asserted by Applicants that claims 1-39 in the Application are in condition for allowance, and Applicants respectfully request an allowance of such claims. Applicants respectfully request that the Examiner call Applicants' attorney at the below listed number if the Examiner believes that such a discussion would be helpful in resolving any remaining issues.

Respectfully submitted,

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